MILTON AND SITTINGBOURNE JOINT DISTRICTS.

# ANNUAL REPORT

ON THE

# HEALTH AND SANITARY CONDITION

OF THE

# Rural District of Milton,

For the Year 1908,

BY

T. BARRETT HEGGS, M.D., D.P.H. Camb.

Fellow of the Society of Medical Officers of Health.

MEDICAL OFFICER OF HEALTH.

SITTINGBOURNE:

W. J. PARRETT, LTD., PRINTERS, 17, HIGH STREET
1909.

# Milton Rural District Council, 1908.

- R. J. TYLDEN, Esq., J.P., M.A.—Chairman.
- R. G. E. LOCKE, Esq., J.P., D.L.—Vice-Chairman.

Councillor T. BENSTED.

- ,, E. B. GASCOYNE.
- ,, H. GREENSTED.
- ,, A. HARNETT.
- ,, E. KEMP.
- ,, H. W. SOUTH.
- ,, E. STEVENS.
- ,, A. J. THOMAS.
- ,, A. TIDY.
- ,, R. M. WAKELEY.
- " W. F. WOOD.

Clerk to the Council—E. CECIL HARRIS, Solicitor.

Surveyor—ERNEST C. PEARCY.

Sanitary Inspector—W. LEONARD GRANT.

VITAL STATISTICS OF THE MILTON AND SITTINGBOURNE COMBINED DISTRICT

7		1		1	0	
- Lai	0	i /		1 A	1 1	8.
1.	4 2	13	1	V . N	1 1	1
	\ /	2, 5	_2	e /	1 /	1 .

	Separate Districts.						
Combined District.	Milton Rural.	Sitting- bourne.	Milton Regis.				
Population (Estimated 1908)	30340	13300	9200	7840			
Area in Acres	37974	34409	1007	2558			
Death Rate (per 1,000 pop.)	11.6	12.3	12.2	9.6			
Infant Mortality (per centage dying in 1st year of life)	7.4	8.1	7.4	6.3			
Birth Rate (per 1,000 pop.)	23.3	21.2	26.5	22			
Total Number of Cases of Infectious Disease Notified (excluding Consumption)	155	85	38	32			
Cases of Typhoid Fever	12	2	4	6			
Cases of Diphtheria	9	3	2	4			
Cases of Scarlet Fever	112	69	25	18			
Cases of Consumption (notified)	29	6	18	5			
Deaths from Consumption	37	10	16	<b>J</b> 1			

# TOWN HALL, SITTINGBOURNE, JANUARY, 1909.

# REPORT for 1908.

## TO THE MILTON RURAL DISTRICT COUNCIL.

Mr. CHAIRMAN & GENTLEMEN,

I have the honour to submit to you my third Annual Report as your Medical Officer of Health. The report for the year 1908 shows that steady sanitary progress is being made in the district. In some particulars, such as the Decline in the Mortality among Infants, and in the number of cases of serious infectious disease as Diphtheria and Typhoid Fever, improvement has been very marked.

The death rate is 12.3 per 1,000 population; slightly better than last year, and well under the average for the past 10 years, namely, 13.3. The Infantile death rate (that is the percentage of Children dying in their first year of life) is showing a satisfactory decline, being the lowest ever recorded for the district: 8.1 per cent. The average for the preceding

10 years is 13 per cent.

The birth rate, however, is also the lowest ever recorded for the district, being only 21.2 per 1,000 population; compared with an average of 27.9 during the previous 10 years. It is, therefore, most important that the Infant death rate be lessened each year—that those Infants born shall live.

## INFECTIOUS DISEASES.

During the year there were 85 notifications recorded (excluding Consumption), compared with an average of 119 per annum during the past 10 years. Of these over 90% were removed to Hospital. This demonstrates the confidence of the

people in the Hospital at Keycol Hill.

Scarlet Fever was epidemic at Murston (28 cases) in the early part of the year, also at Newington (10 cases), and Milsted (9 cases). The mild character of the disease increases the difficulty of checking its spread. No death occurred from this disease. The total number of cases during the year was 69, compared to an average of 59 per annum during the past 10 years.

Of Diphtheria, three cases occurred, compared with an

average of 29 per annum for the past 10 years.

Of Typhoid Fever, 2 cases, compared with an average of 14 per annum for the past 10 years. These figures must be considered satisfactory.

Consumption or Tuberculosis.—Of this disease there were 10 deaths, compared with an average of 15 during the past six years. The age at death varied from 5 to 57 years. The average age at death was 24 years. During the year 6 cases

were notified to me (five males and one female), ages varying from 6 to 40 years; the average age of these cases being 24 years. Many cases of this disease die without being previously notified to me.

Of the total number of persons who died during the year, 47% were of 65 years of age and over, as compared with 41% in 1907 and 39% in 1906. This is satisfactory, and should encourage us to still further efforts to prevent disease, prolong life, and save life, for which sole reasons a Sanitary Authority exists.

I would ask your consideration of my Report with the following questions before you:—

1. Which diseases are causing the greatest loss of life, suffering, and economic loss to the community?

2. Which of these diseases are preventible?

- 3. What preventive measures are likely to produce best results?
- 4. Are we using these preventive measures to the utmost practicable extent?

I would draw attention to the fact that no action has been taken upon the following Special Reports:—

- 1. Concerning the advisability of a joint whole-time Sanitary Inspector for the combined Sittingbourne and Milton districts (December, 1906)...
- 2. On the need of a system of sewerage and excrement disposal works for the Parish of Rainham (December, 1906).—For extracts see Appendix A.
- 3. Proposed provision for Open-Air Sanatorium Treatment and Hygienic education of cases of Consumption by the joint Sittingbourne and Milton districts (July, 1908).—See Appendix B.
  4. On the need of a Public Water Supply for the

4. On the need of a Public Water Supply for the Parish of Iwade (presented January, 1909).—See Appendix C.

In your Sanitary Department everything is being done to obtain efficiency that can be done under the separate administration in vogue.

The same graphical methods of demonstrating statistics are used as in previous Reports.

Thanking you for your sympathetic attention to the work of my department,

I am,

Your obedient servant,

T. BARRETT HEGGS.

VITAL STATISTICS of 1908 compared with past years.

		· · · · · · · · · · · · · · · · · · ·	1. 9.5
	1908.	1907.	Average per annum for past 10 years.
Death Rate (per 1,000 Population)	12.3	12.4	13.3
Infant Mortality (per centage ) dying under 1 year of age)	8.1	8.8	13.0
Birth Rate (per 1,000 Population)	21.2	25.3	27.9
TotalInfectiousDiseasesNotified (excluding Consumption)	85	155	119
Cases of Typhoid Fever	2	0	14
Cases of Diphtheria	3	6	29
Cases of Scarlet Fever	69	137	59
Deaths from Tuberculosis	10	11	15 (past 6 years)

# GENERAL SANITARY CIRCUMSTANCES.

# PHYSICAL FEATURES AND GENERAL CHARACTER OF THE DISTRICT.

Milton Rural District constitutes the largest portion of and its boundaries are identical with the Milton Registration District in the North-East of Kent. It is bounded on the West, South, and East by the Medway, Hollingbourne, and the Faversham Unions, and on the North by the Rivers Swale and Medway. Much of the land on the North and North-West is marsh land, and is intersected by Creeks, the chief being Milton Creek. From this low-lying marsh land the district rises toward the South, reaching an elevation of 200-300 feet above sea level in Bredgar Parish

The Rural District contains 16 Parishes, which surround on all sides the Urban districts of Sittingbourne and Milton, situated in the North-East portion of the Registration district.

The Parishes are typically agricultural except those bordering the Swale and Creeks, where brick-making and cementmaking have caused aggregations of urban population in the portions of these parishes near the Creeks, notably Rainham

(pop. 4,100) and Murston (pop. 1,370).
Geologically chalk is the formation throughout the district, overlaid with patches of brick earth and gravel. There are extensive alluvial deposits bordering on the Swale and Creeks. This is particularly so in Rainham Parish on the extreme West, in Murston on the North-East, which adjoins and is practically continuous with Sittingbourne, and in Up church and Lower Halstow Parishes.

Industries are (1) agricultural (chiefly fruit and hops), (2) brick, and (3) cement-making, (4) the barge industry, which consists chiefly of the carriage into the district of London refuse for brick-making and of manure, and the exportation

of bricks.

Roads.—There are over 17 miles of main roads, and of bye-roads over 101 miles. The main roads are generally in good condition, but some private roads which are not yet taken over by the Council in the more populous parts, particularly in Rainham, are in very bad condition. These private roads in Rainham are disgraceful.

#### INFLUENCE OF OCCUPATIONS UPON THE PUBLIC HEALTH.

In the brick trade as carried on throughout this neighbourhood (manufacture of the Kent stock brick), "London refuse," consisting of street sweepings, rags, tins, ashes, and general dry house refuse is used extensively. Brought from London in barges, it is deposited in huge mounds on the banks of the Creeks; in some few cases it is carted into the town and deposited in the neighbourhood of dwelling houses, as at Lower Halstow and Otterham, Upchurch, and Milton Regis.

This London refuse is sifted two or three times, until the heavier material is sifted away and the fine dust remains, which latter is used as fuel in the burning of the bricks. It is during this process of sifting that the offensive smell from this material is greatest. This brick manufacture is the staple industry of a large part of our district. Notifiable infectious disease cannot in my districts be traced to these accumulations. Epidemics of sore throat have, I am informed, followed immediately upon fresh consignments of this material; in fact, medical men have been enabled in a neighbouring Urban District to trace the route of passage of such material through the streets by the occurrence of cases of septic sore throat.

The following precautions should be taken by the trade:— 1. The crude or unsifted London refuse should only be deposited well away from dwellings, and the mounds

covered over with a few inches of earth.

2. The sifting should be done on such a spot well away from dwellings, and only the completely sifted fine material be allowed to be carted through the streets, or to be deposited near dwellings, and when deposited in bulk should be covered with a few inches of earth. The carts when carriage through the streets is necessary should be completely covered in. The depressed condition of this trade in the district is the reason that more stringent action in this matter has not been advised by your Medical Officer.

#### HOUSE ACCOMMODATION.

An occasional case of overcrowding has been discovered during the year, but generally the accommodation is sufficient. The dwellings, which are mostly cottage property, are of brick with slate roofs, some few wooden and thatched dwellings remain. Rain water pipes very often terminate several feet from the ground, and the intended water butt being absent, soaked walls at these places are common. Frequently separate accommodation is not made for the rain water, but it is allowed to flow into the sink water cesspool, which latter therefore quickly fills and overflows at each storm. This circumstance is most frequently found at Rainham, for which parish during the last two years I have strongly advocated a system of main drainage, which would obviate the nuisance from the above defects.

Back yards are frequently badly paved, but a number of them are being remedied during each year.

Generally there is a sufficiency of open space about the houses.

During the year only one cottage in use was found not fit for human habitation—at Borden. This was closed by the owner on demand.

The supervision over the erection of new houses is satisfactory, very few new buildings, however, have been erected during the year (8 houses in Borden and 8 in Rainham).

No action has been taken under the Housing of the Working Classes Act.

# SEWERAGE AND DRAINAGE, AND HOUSE REFUSE DISPOSAL.

Sewerage with septic tank and bacterial bed treatment is in vogue at Murston and Newington. The results are successful.

During the year 1906 I submitted to you a special report on the need of a system of sewerage at Rainham. Following upon this report the Parish Council of Rainham decided to apply for Urban Powers, and in consequence the Council postponed discussion of this report sine die. The application of the Parish Council to the County Council for Urban Powers was refused (Nov., 1907) after public inquiry had been held at Rainham. The Rural District Council therefore discussed the report of their Medical Officer (Dec., 1907), when, upon the resolution of one of the Rainham representatives, the recommendations were not adopted.

However, while rejecting my recommendations, the Rainham representatives agreed that something should be done, and suggested a system of scavenging, both for house refuse and the clearing of cesspools and privy vaults. Early in 1908 this work was undertaken by private contract. The excrement and house refuse is partly taken by farmers and partly buried. No complaint has been received from this source. There are 872 cesspools in Rainham and nine privies—318 of the cesspools are connected to privies. Upwards of 600 cesspools and privy vaults were emptied in Rainham during the year, necessitating the serving of some 538 notices—which is more than two-thirds of the total number of nuisances dealt with in the year from the whole district. This work cannot be done without a certain amount of nuisance and danger to the Public Health. Many of the cesspools require emptying two or three times a year, and when connected with a properly flushed w.c., in some cases even more frequently. pits are emptied by pails carried through yards and passages to the cart in the street. In some instances these pails have to be carried through the house, in one case through a fish shop. At its best, this is a filthy and insanitary system. In reference to house refuse, the regular collection fortnightly has been most successful, abolishing the accumulations of refuse in the yards, which used to be so frequent.

The cost of this system of scavenging and cesspool emptying was £430 for the first year, and a contract has just been entered into for three years, for a sum of £900. This has necessitated in the past a rate on the Parish of 5d. for the half-year.

Parish of Murston (1,370 population) has an efficient system of sewerage and sewage disposal by septic tank and filter beds, which costs them a rate of 6d. per half-year. It is probable that a system of main drainage and sewage disposal for the greater part of Rainham would not involve an annual expenditure greater than the cost of the present insanitary system of cesspool emptying, with this important distinction, that a system of sewerage is sanitary, and after the works are paid for, the cost of working is very small, and the works are a valuable asset to the parish.

A regular system of scavenging of house refuse is carried out in Murston parish by the owners (a large brick and cement making firm), and works very well. There is no regular scavenging in other parts of the district, though generally very little nuisance exists from this cause, particularly in the more rural parishes, where it is customary for the tenant to dig his refuse and bury the excrement in his garden.

There are no privy middens in the district, and closet accommodation is generally sufficient. Many crude privy pits

exist.

House drainage is generally into soak-away cesspools, but in some cases no house drains are provided, the waste water being thrown on the garden.

#### WATER SUPPLY.

A large part of the District is supplied by the Sitting-bourne and the Rainham Water Works The former supplies the following parishes, Murston, and parts of Bobbing, Newington, Borden, and Bapchild. The Rainham Works supply Rainham, Upchurch, Hartlip, Newington, and Halstow parishes. Each of these Works supply is from a deep well, the Sittingbourne into the chalk, Rainham boring being at a depth of 900ft. into the green sand.

Chemical Analysis of the water from both these wells shows the supplies to be of exceeding purity. Sittingbourne well shows 16.7 to 16.9 degrees of hardness and Kainham well only 1.1 degrees. Both wells are by their depth and nature of surroundings generally secure from grave risks of pollution. However, periodical analysis should be made, as in this way pollution can be detected at an early stage, particularly if chemical analyses be supplemented by a bacteriological one.

The Southern Parishes of Bredgar, Borden, Tunstall, and Milsted are now supplied by the Mid-Kent Water Company (a supply of excellent analysis), so that a large number

of wells will thus be dispensed with.

In other Parishes (as Iwade and Bapchild) wells form the

only supply, and here the supply is often deficient.

During the year the need for a further water supply to the

Parishes of Bapchild and Iwade has been considered.

Bapchild.—Here a public supply can be obtained from the Mid-Kent Water Company or from Sittingbourne Water Company, both of which supply neighbouring parishes. Several of the existing wells supplying houses in Bapchild Street are sewage contaminated. The Bapchild representative exposing no action was taken

tative opposing, no action was taken.

Iwade.—Here a special report was called for upon the existing supply to the parish. See Appendix. In this parish the School is without any supply of water, so that no proper sanitary conveniences are possible, and no lavatories or drinking water. The existing wells are generally not sewage contaminated, but the water from all has an extraordinary degree of hardness (30 to 50 degrees), and

contain a large amount of salt. No injury to health can be traced, but the supply generally is unfit for domestic use. There is difficulty here in obtaining a public supply, the nearest being Milton Regis, and necessitating 2 miles of mains. The question of a public supply was deferred; in the meantime the owners of those wells found contaminated were ordered to clean them out.

Wells are sometimes found in dangerous proximity to cesspools and privy pits, and the surface about the wells is in some cases entirely unprotected from the washing in of dirt by the rain.

### COMMON LODGING - HOUSES.

There are none in the District.

#### SLAUGHTER - HOUSES.

Most of these throughout the District are now on a satisfactory basis.

There are 9 Slaughter-Houses in the district, as follows:—Rainham 3, Newington 1, Bapchild 1, Borden 1, Halstow 1, Bredgar 1, Upchurch 1.

Attention was drawn during the year to a practice in vogue in the district, of regularly killing pigs (for the sale of the meat) in unauthorised places—some of them quite insanitary. These persons in each instance have been ordered to build a suitable sanitary slaughter-house for such trade. It is always possible for persons keeping pigs to have the killing done in an authorised slaughter-house. We have not power, except in Rainham and Murston (our more urban parishes), to make bye-laws in this particular.

## DAIRIES, COWSHEDS, & MILKSHOPS.

In the Milk Trade in the District are registered by the Council 29 men as Cowkeepers, 26 as Dairymen, and 33 as Purveyors of Milk. The Cowsheds are situated as follows:—Bobbing 5, Borden 3, Bredgar 2, Halstow 2, Hartlip 3, Iwade 1, Milsted 3, Murston 2, Rainham 6, Rodmersham I, Newington 1, and Tunstall 1.

An explanatory memorandum on the modern Cowshed and Dairy requirements was drawn up and a copy sent to each Cowkeeper and Dairyman in the district. Advice is given in this for a hygienic milking routine, as well as in structure of cowshed, cooling, etc., of milk, and the legal requirements. There is still need of improvement in the Milk trade in the general cleanliness of Cowshds and particularly in the milking routine.

Most of our milk is sold locally, some is sent to Gillingham.

In only three of the largest Dairy Farms (60, 40, and 20 cows) is a water cooling apparatus used—this should be in all. In only few is there evidence of systematic and careful cleansing of the udders before milking, and any provision for the milkers washing their hands. The absence of good water supply handicaps several Dairies as to cleansing of the sheds, etc. The advent of the Mid-Kent Water Company should be a great boon to many. The milk vessels are generally clean. I understand that the local Police are quite active in the discharge of their duties under the Sale of Food and Drugs Act.

An improvement is noticeable in the general conduct of the Trade in the district. Conditions are yet sometimes far from the ideal of practical sanitation. However, matters are being steadily improved. I hope to see the adoption of an apparatus for cooling the milk in each dairy during the

SUMMER of 1909. The cost is not prohibitive.

The public should insist on cooled milk for two particular reasons; (1) because the warmer the milk the more rapidly do the bacteria in it increase and multiply, so that in a very few hours milk which has not been cooled is many times dirtier and more crowded with bacteria than cooled milk. Milk containing large numbers of bacteria will give disease and illness, particularly to Babies and Invalids; and (2) in hot weather some dairymen, to prevent the rapid increase of bacteria—which turns the milk sour—do add preservatives, such as boric acid, to the milk. These substances added to the milk are injurious, particularly to Babies, and are not necessary to cooled milk.

Milk when drawn from the Cow is practically free from bacteria, and the milk as usually supplied in towns contains from a million upwards of bacteria in each teaspoonful. In hot weather this number may be very much exceeded. Is it surprising that each year a number of Infants—whose only food is milk—do die in the summer season of what is called Infantile Diarrhea. The souring of milk is due to the production of acid by the rapidly increasing enormous number of bacteria. This great increase of bacteria which goes on from the moment the milk is drawn from the Cow can to a large extent BE PREVENTED BY COOLING the milk when first drawn to about 50 degrees F., and keeping it cool till it is required to be used. This cooling adds considerably the keeping powers of the milk.

It is well known that such diseases as Scarlet Fever, Typhoid Fever, Diphtheria, Diarrhæa, Tonsilitis, and Consumption can be conveyed to people through drinking infected milk, so that it is most important that all we can do to keep the milk clean and pure should be done. Mothers are reminded that it is useless for the dairyman to take pains to keep the milk pure by using clean scalded vessels and by cooling the

milk if the consumers themselves do not take equal care to protect the milk from dirt, dust, and objectionable fumes and flies by only using scrupulously clean vessels, and keeping the milk covered and in a cool place.
The careless exposure of milk to flies and dust, particularly

where privies exist or house refuse is collected, is often the

means of conveying disease to Children.

#### TUBERCULOSIS AND MILK.

Further reports of the Royal Commission appointed to enquire and report with respect to Tuberculosis with reference to the transmission of this disease from animals to man are of great interest. The fact is yet more conclusively established that the Bacilli of Bovine Tuberculosis, the organism causing Consumption in the Cow, on entering the human body may set up active and fatal Tuberculosis. By feeding healthy Calves from Cows with tubercular udders, and killing these Calves in specified times, it is found that extensive signs of Tuberculosis are present in as short a time as 36 days. The danger of feeding Babies upon milk from Tubercular Cows is thus demonstrated. There is, therefore, urgent necessity for stamping out 'luberculosis from dairy cattle as a means of preventing the transmission of this disease to Children. The Cows in the dairies of our districts should be inspected by a Veterinary Surgeon quarterly. Such a routine inspection could be done at a small annual salary. I have authority to have examined any Cow I suspect, but the routine inspection by a Veterinary Surgeon would be well worth its small cost.

#### BAKEHOUSES.

These are, with one or two exceptions, retail Bakehouses, and were generally found in a satisfactory condition.

#### OFFENSIVE TRADES.

There is a small Fat Extracting Works on the foreshore at Lower Rainham. No complaint has been made during the year of nuisance from this.

#### FACTORIES AND WORKSHOPS ACT.

Under this Act the Council has control over the cleanliness, ventilation, overcrowding, w.c. accommodation, and general sanitary circumstances of the above premises.

During the year one notice of occupation of new work-

shop was received.

There are 25 Workshops and Workplaces in the whole Rural district, including 5 brickfields and the premises connected therewith. Inspections were made of these during the year, and no defects noted. No outworkers reside in the

New houses built have been very few (16), but the increase of births over deaths with other factors has helped me to my estimate of the population for 1908 as 13.300; estimated in 1906, 13.053. The growth of the district is thus shown:

# TABLE A. VITAL STATISTICS.

New houses built have been very few (16), but the increase of births over deaths with other factors has helped me to my estimate of the population for 1908 as 13,300—estimated in 1906, 13,053.

1891.

1901.

1908.

The growth of the district is thus shown:

1881.

Year.

		1		2002.		1002.	2000.
Population		11,1	95	11,453	1	2,123	13,300
	Persor	ns per h	ouse	(1901 cens	sus)	4.66.	
						Population 1901.	Population, 1908.
Bapchild	•••	•••		•••	• • •	421	440
Bobbing	• •	• •	• •	• •	• •	555	527
Borden	• •	• •	• •	• •		1270	1290
Bredgar	• •	• •	ç •	• •		498	528
Hartlip	• •	• •	• •	• •	• •	360	371
Halstow	• •	• •	• •	• •	• •	645	667
Iwade	• •	• •	• •	• •		232	214
Kingsdow	n	• •	• •	• •	٠.	73	73
Milsted	• •	• •	• •	• •		206	220
Murston	• •	• •	• •			962	1370
Newingto	n	• •	• •	• •	• •	1072	1118
Rainham	• •	• •	• •	• •	• •	3688	4100
Rodmersh	am	• •	• •	• •		385	380
Tong	• •	• •	• •	• •	• •	357	380
Tunstall		• •	• •	• •	• •	270	275
Upchurch	• •	• •	• •	• •	• •	1229	1257

TABLE B.

VITAL STATISTICS OF SEPARATE LOCALITIES
FOR 1908.

the same and the s					
Parish.		Population.	Births registered.	Deaths at all ages.	Deaths under 1 year of age.
1. Bapchild		440	10	7	2
2. Bobbing		527	9	11	1
3. Borden	•••	1290	29	17	0
4. Bredgar		526	14	6	1
5. Halstow	• • •	738	21	6	1
6. Hartlip		383	8	3	0
7. Iwade	• • •	214	5	6	1
8. Kingsdown	• • •	73	0	0	0
9. Milsted	• • •	220	1	1	0
10. Murston	• • •	1370	37	12	4
11. Newington	• • •	1118	13	14	1
12. Rainham		4100	97	53	7
13. Rodmersham	• • •	380	6	5	1
14. Tong	• • •	380	4.	3	0
15. Tunstall	• • •	275	2	2	0
16. Upchurch	• •	1257	26	18	3

#### BIRTHS.

During 1908 there were 282 births registered, making a birth rate of 21.2 per 1,000 population; a decline on last year. Of the 282 births 11 were illegitimate, that is 3.9%. The average birth rate for the past ten years is 27.9. With this falling birth rate it is most necessary that every child born shall live. Of the births during the year 138 were males and

144 females.—See Table I.

The decline in birth rate is also seen in the Country's statistics as a whole—even when the rate is corrected for sex and age constitution of the population by calculation per 1,000 women of child-bearing age. In the statistics of England as a whole, the decline in the birth rate in the past 35 years is by the Registrar-General accounted for as follows:—"About 17 per cent. of the decline is due to the decrease in the proportion of married women of conceptive ages and about 10 per cent. more to the decrease of illegitimacy. With regard to the remaining 73 per cent., there exists little doubt that the greater part is due to deliberate restriction of child-bearing on the part of the people themselves." In England from 36.3 per 1,000 living in 1876 the birth rate has dropped to 27.2 per 1,000 living in 1905. Locally the same is seen in our district (Milton Rural district) from 29.9 per 1,000 living in 1902 to 21.2 in 1908. With the exception of France, the rate of fertility among English married women in 1900-02 was lower than in any other European country.

#### DEATHS.

During 1908 there were 164 deaths belonging to the district. Of these 144 were registered in the district, 24 were of residents registered beyond the district (in Milton Workhouse, Rochester Hospital, Chartham Asylum) and 4 of non-residents registered in our district.

The death rate is, therefore, 12.3 per 1,000 population. The average death rate of the past 10 years is 13.3.—See

Table II.

Of these total deaths 23 were of infants under one year of age, compared with 29 last year. Also of the total deaths 47% were of persons of 65 years of age and over, compared with 41% in 1907 and 39% in 1906.

The most frequent causes of death and the number are

as follows:—

 1. Old age (senility)
 25 deaths.

 2. Heart disease
 19

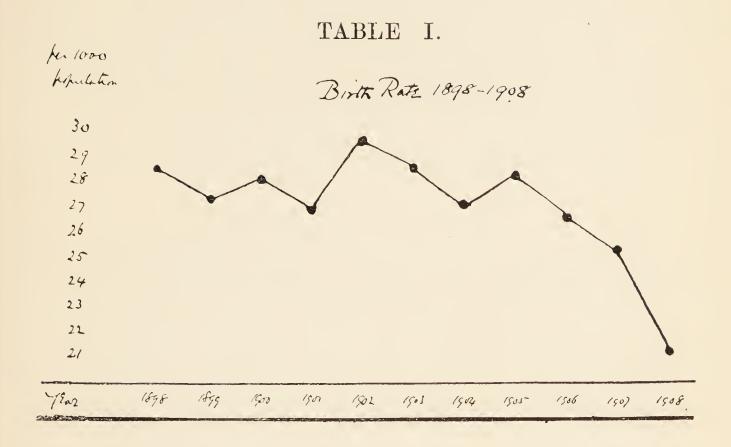
 3. Kidney disease
 14

 4. Cancer
 11

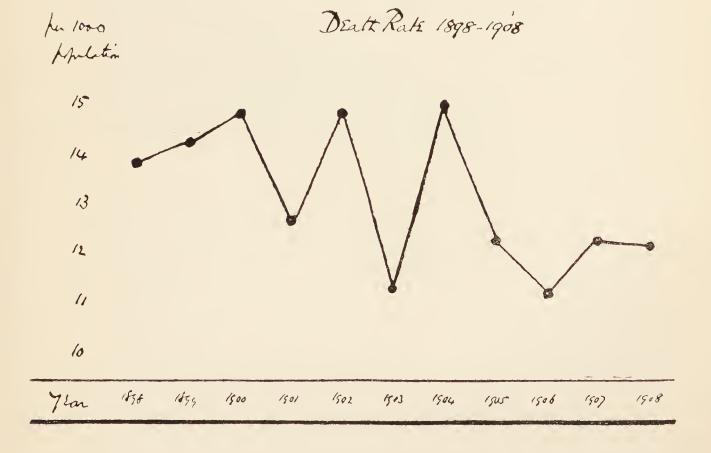
 5. Tuberculosis or Consumption
 10

The most satisfactory features are (1) the decrease in the number of Infants dying under one year of age and (2) the

increase in those dying of Old Age.



# TABLE II.



The death rate is not the best possible index of the health of the community, there is need of a "Sickness" rate. There is, of course, much sickness of insufficient severity to destroy life. This is greatest among Children, when the after-effects are often very serious; but there is also much Adult non-fatal sickness, which, by the loss of wage-earning power to the community and by the loss of enjoyment of life it causes, is of the greatest importance. Much ill-health due to insanitary environment therefore does not show itself upon the mortality statistics. See Table C.

### INFANTILE MORTALITY.

During 1908 books of advice on the Management and Feeding of Infants were sent to Mothers, as in 1907. upon receipt of the notification of the births from the Registrar.

Last year 8.1% of all Children born died within one year, as compared with 8.7% in 1907, and an average of 13% during the past 10 years. There is still much room for improvement—too many Children die from Premature Birth.

This Infant mortality can be improved by (1) the better general education of the new Mothers year by year; (2) the improved sanitation of the district; (3) the hygienic education of the Mothers by the Sanitary Department; (4) the improvement of our milk supply; (5) the prevention of epidemic diseases, as Measles and Whooping Cough; (6) the work of a Lady Health Visitor.

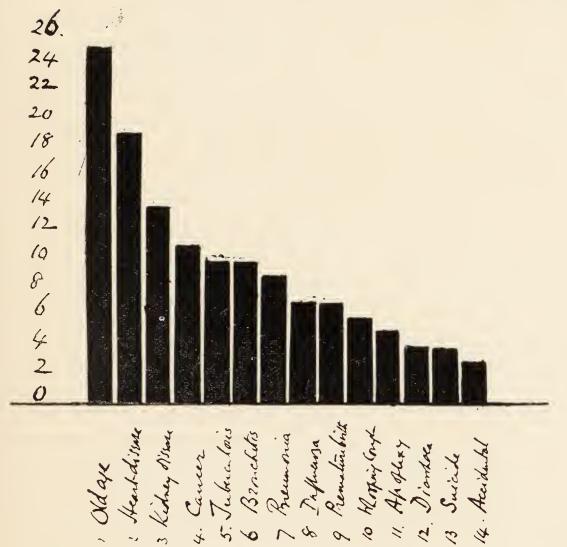
Table IV. shows the Infant mortality during the past 10 years. Of these Infant deaths the chief causes are shown below, compared with previous years.

## CAUSES OF INFANT DEATHS, 1906-1908.

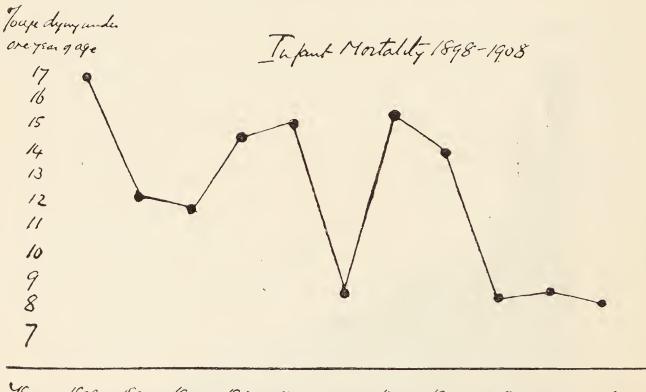
	1906.	1907.	1908.
The common Infectious Diseases.	1	4	3
Diarrhœal Diseases	10	1	3
Premature Birth and Wasting Diseases	10	15	12
Tuberculous Disease	0	0	0
Other causes	8	9	5
Total	29	29	23

## TABLE C.

Diagram Vhraning the Mation numerical emportance of the chief causes of death in Melin Rural Dishiel during 1908.



# TABLE IV.



YEar 1898 1899 1900 1901 1902 1903 1904 1905 1908 1909 1908

#### INFECTIOUS DISEASES.

#### TABLE V.

Diphtheria	Bapchild	1 Bobbing	Borden	Bredgar	Halstow	Hartlip	Iwade	Kingsdown	Milsted	Murston	Newington	Rainham	L Rodmersham	Tong	Tunstall	Upchurch	whole District
Scarlet Fever	1	1	7	3	1	1			9	28	10	3		4	1		69
Typhoid Fever												1				1	2
Erysipelas									1	2	1	4		2			10
Puerperal Fever .													1				1
Consumption				1	1		1			3							6
Total	1	$\frac{-}{2}$	7	4	3	1	1	0	10	33	11	8	2	6	1	1	91

The total number of notified infectious cases during 1908 was 85 (excluding Consumption). Most of these were of Scarlet Fever, which was epidemic (28 cases) in Murston, and to a smaller extent in Borden, Milsted, and Newington. The above Table V. shows the number of cases from each parish. In the following Table VI. the total number this year is compared with previous years. We are only now beginning to recover from the visitation of Scarlet Fever, which began with the Rainham epidemic in 1906. There were but 3 deaths from the 85 above notified infectious cases. One of Typhoid, of Diphtheria, and of Puerperal Fever.

However, the seriousness of non-notifiable infectious disease is demonstrated when we note that last year there were 6 deaths from Whooping Cough, 7 from Influenza, 10 from Tuberculosis, and 11 from Cancer. Epidemics of various of the infectious diseases occurred in the Schools, and are shown later under School Hygiene. These contagious and infectious complaints are notified to me from the Schools, and 221 such cases were notified, compared with 195 in 1907 and 262 in 1906. 32 deaths, or 20% of all deaths in the district, were due to infectious preventible disease (excluding 11 deaths from Cancer). Under improved hygienic conditions these deaths should gradually be prevented.

TABLE VI.
Istal royard cases (1898 - 1508).

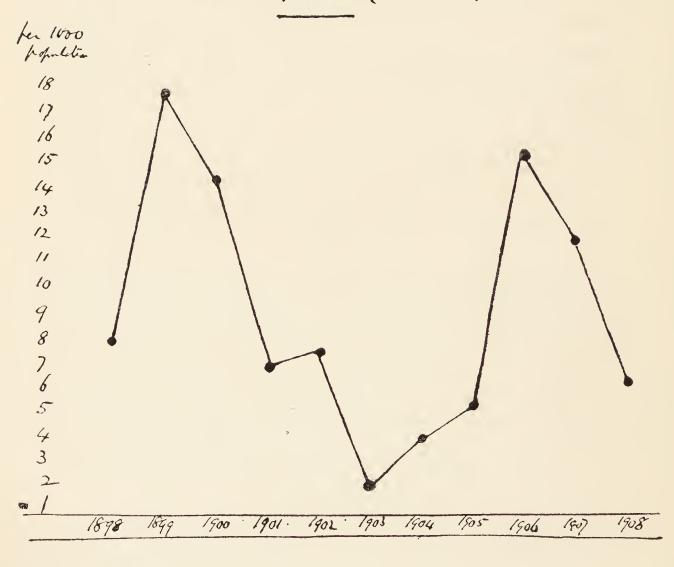


Table VII. shows the proportion of the notified cases which were removed to Hospital for isolation during 1908, compared with previous years. The Hospital evidently holds the confidence of the public, as 90% were removed last year.

#### DIPHTHERIA.

Of this disease 4 notifications were received by me; in one of these the diagnosis was revised after bacteriological examination at the Hospital Laboratory. Last year there were 6 cases, and the average per annum for the preceding 10 years is 29. The Hospital Laboratory is of great service in this disease, as bacteriological examinations are undertaken for medical men free of cost. Table VIII. shows the incidence of this disease upon the district during the past 10 years.

### SCARLET FEVER.

This disease is most intractable to the present sanitary measures. We are handicapped (1), by want of knowledge as to the bacterium or micro-organism, which is the cause of the disease, and consequent ignorance as to its habits, its mode of life, its resistance, its dissemination; (2), by the apathy of many parents who, owing to the mildness of recent epidemics, have no fear of the disease; (3), by the carelessness of such parents in not consulting a doctor when a rash appears in any illness.

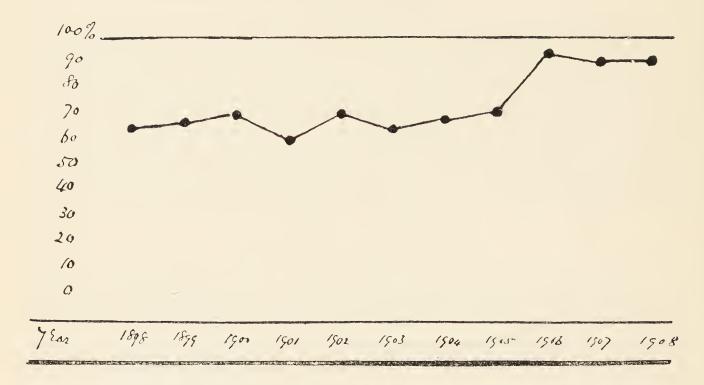
As long as the Child does not seem very ill to the parent no advice is asked, and often Children are sent back to School while still infectious. The recent epidemic of 11 cases of Scarlet Fever at Bapchild was caused by a Child, who had suffered from an illness with rash (unrecognised Scarlet Fever) during the Christmas holidays, being sent back to School when School opened while still infectious. Further families were affected, and no doctor consulted until several in a house were affected. This is the usual cause of an epidemic. We can only hope for better things by the education of our future Mothers in hygienic matters at the Schools. Education to the girls about to leave School in the rudiments of Nursing, the management of Children, the common Infectious Diseases, hygiene in the home in general would be very beneficial.

During 1908 there were 69 cases of this disease notified, in some of them the diagonsis was revised later. The disease was epidemic in Murston, and to a smaller extent in Borden, Milsted, and Newington. The cases occurred generally among School Children, and the infection conveyed by unrecognised mild cases at the Schools.

Table IX. shows the incidence of this disease upon the district during the past 10 years.

## TABLE VII.

To age of cases Brusved & the Hopetel (Keyer Hill)
of the Cases of the diseases admitted there 1898-1908



## TABLE VIII.

Deflicia 1898-1908



TABLE IX. Scarlet Fran 1898-1908



## TYPHOID FEVER.

Three cases of this disease were notified, but in one the diagnosis was revised after bacteriological examination at the Hospital Laboratory. These 2 cases occurred in Rainham and Upchurch parishes. The origin in one case was probably oysters gathered by the patient (a bargee) in the neighbourhood of the local Creek. In the second case the origin was undiscovered.

What I stated in my 1906 report of the frequency of shell-fish borne Typhoid Fever in the locality is being constantly confirmed.

I am convinced that if people would take the strong medical advice on this point and refrain from eating any shellfish obtained or likely to have been obtained from local contaminated sources, these cases of Typhoid Fever would practically entirely disappear. The same thing is being found in other districts where contaminated shellfish is imported; numbers of cases of Typhoid Fever are caused through their consumption.

Table X. shows the incidence of this disease upon the district compared with previous years.

#### MEASLES.

During the year Measles was not epidemic in the district. No cases were notified to me from the Schools. An epidemic occurred in Rainham (113 cases) and Upchurch (35 cases) in 1907. The incidence upon a district of most of these very infectious diseases is in cycles. A large percentage of the non-immune or susceptible Children is affected at each visitation, the epidemic stopping when a certain percentage have been affected. The liability to an invasion becomes increasingly great as the number of susceptible Children of School age increases. Early notification to me of the first cases occurring from the Schools and the exclusion of these Children and contacts is the only satisfactory method of working. These epidemics can only be controlled by active and persistent cooperation of the teachers in the Schools, the parents, and the Health Department.

### GERMAN MEASLES.

Thirty-four cases of this disease were notified to me from the district. An epidemic of 20 cases occurred at Upchurch and a smaller one of 12 cases at Halstow, an adjacent parish; 2 sporadic cases occurred at Bredgar and Bobbing. No deaths occurred.

#### ERYSIPELAS.

During the year 10 cases were notified, generally in Adults. Four of these occurred at Rainham.

# TABLE X.

Typhond From 1898-1908



### WHOOPING COUGH.

During the year 86 cases of this disease were notified to me from the Schools. Six deaths occurred, all under 5 years of age; 2 in Iwade, and 1 each in Bapchild, Bobbing, Murston, and Upchurch. There were 9 deaths from this disease in 1907.

Whooping Cough is not one of the compulsorily notifiable infectious diseases, consequently the actual extent of the disease is unknown. Mothers are not only often careless as to treating their children who suffer with it, but are careless as to exposing them for other children to be infected.

Several of the infectious diseases are dangerous, not so much because of their immediate fatality as because of their complications and sequelæ or after effects. Owing to this many Children are needlessly damaged for life through the carelessness and ignorance of their parents, who argue that as the disease is not likely to be fatal it is better that the Children should have it and get it over. For this reason to my knowledge in this district in some families where one Child has developed one of these infectious diseases, the others who happily had escaped were deliberately placed in the same room, that they too might take the disease and so save the parents the trouble of isolation. In the recent mild Scarlet Fever epidemic a not infrequent complication was heart disease, which in many cases will probably mean the loss of 5 or 10 years to the duration of life of that man or woman. Again in Whooping Cough, as also in Measles, the chief aftereffect is a weakness of the respiratory organs which would predispose the Child to the development (if infected) of Consumption, and may be the real cause of the death at a later date from Pnuemonia, Bronchitis, or some other acute respiratory disease. The seriousness of this disease is considerably under-rated by parents.

This disease was epidemic during the year in Iwade (40 cases notified), Rodmersham (23 cases), Milsted (11 cases), and Tunstall (12 cases). In reality many more cases than these occurred in these epidemics, the above are numbers of notifications, and one notification of an infected house may mean several cases. It is noteworthy that during the Medical inspection of School Children this year (1909) I found more Children with signs of early Consumption in their lungs in those Schools where Whooping Cough had been epidemic in the previous year. The lungs are more prone to be infected should there be a Child suffering from Consumption in the School.

#### CHICKEN - POX.

During the year 48 cases of this highly infectious disease were notified to me from the Schools. No deaths occurred.

The disease was epidemic in Newington (24 cases), Hartlip (9 cases), Bapchild (8 cases), and Rodmersham (7 cases).

#### SMALL - POX.

No case was notified during 1908. No case has occurred since 1905. Cases in the past are as follows:—

Year.	1902.	1903.	1904.	1905.	
Cases	57	2	0	1	And none since

The Small-Pox Hospital is kept ready to deal with an emergency.

CANCER.

Eleven deaths occurred from this disease. The deaths in previous years were as follows:—

Year.	1902.	1903.	1904.	1905.	1906.	1907.	1908.
Deaths	10	11	8	6	11	6	11.

Research on this disease has not succeeded yet in isolating the cause.

#### PUERPERAL FEVER.

One case was notified from Rodmersham, and one fatal case occurred at Upchurch. This disease is often associated with insanitary conditions during the "lying in."

### TUBERCULOSIS OR CONSUMPTION.

During 1908 there were 10 deaths from Tuberculosis. The number last year was 11, and the average per annum for the past six years was 15.

There were 6 cases voluntarily notified to me during 1908. They were of 5 males and 1 female; ages varying from 6 years to 40 years—the average age being 24 years. Of the 10 cases dying in the year the ages varied from 5 to 57 years, and the average age at death was 24 years.

During the first 3 months of 1909 there have been 16 cases of this disease notified, with an average age of 18 years. Several of these cases were discovered at the Schools.

Tuberculosis is an infectious disease caused by a micro-organism called the Tubercle Bacillus, which was discovered by a German bacteriologist, Koch, in 1882. In the majority of cases the disease has its seal in the lungs, and it is more particularly this form of Tuberculosis—called Consumption—that merits the attention of all Health Authorities. Consumption or this disease in the lungs is very highly infectious. We know with certainty that the bacilli get into the air with the sputum or phlegm of Consumption patients. The phlegm of Consumptive people then is to be regarded by us as the main source of the infection of tuberculosis, although the transmission of the disease by milk and meat from infected Cattle is becoming more and more seriously recognised. The danger from the latter can be met by boiling the milk and well cooking the meat. For our purpose infection from human patients alone is considered, as this is chiefly responsible for the causation of Consumption.

To get this disease it is indispensable that the person be infected with these Tubercle bacilli, and the disease can be entirely prevented by avoiding infection by these bacilli. The disease must be caught from someone who has it, or some room or articles infected by a sufferer. Its development is aided by defective nutrition and by other conditions unfavourably influencing personal health, and by insanitary circumstances of environment. Its development will be prevented by keeping up to a high level the general tone of the body, by good feeding, warm clothing, fresh air and exercise; in fact, by a healthy hygienic life.

Consumption is not only a preventible disease, but it can also be arrested, especially in its earlier stages; and, INDEED, THE VAST MAJORITY OF THOSE ATTACKED BY IT RECOVER.

The number of persons dying of this disease has declined materially during the past 30 years. In the United Kingdom during the last 30 years a decline of 40% among those under 5 years of age, of 23% from 5 to 10 years of age, of 37% from 10-15 years of age, of 50% from 15-20 years of age, 51% from 20-25 years of age, and 46% from 25-35 years.

This decline has occurred under the influence of improved sanitation and higher social welfare. These improved conditions have acted by diminishing infection and by increasing the resistance of the population to infection. Thus the vastly increased treatment of advanced cases of Consumption in Infirmaries and other Institutions has been most valuable in securing segregation of patients from their families, as well as in securing humane treatment for the patients themselves. This segregation, or separation, of patients from their families—even if for a short time only—gives the families an opportunity of throwing off the infection they may have already received, and lessens the probability of their becoming seriously infected. This is one of the reasons for the strongly advocated policy of taking advanced or very infectious cases from their homes into a Sanatorium, if only for a period of a few months at a time.

Diminution of overcrowding in houses and improved ventilation in homes and workshops has diminished infection and increased the resistance to it. All other measures of sanitary and social improvement have acted by increasing the resistance of the people or by diminishing the amount of the infection, or by both.

Although Consumption is infectious, in ordinary circumstances the only source of infection is the material coughed up as phlegm, or invisible in the cough spray. This mode of infection can be controlled by the patient with little trouble, if he is intelligent and scrupulously careful. Consumption is very much a disease of ignorance, and the most valuable element of the measures for its treatment and relief is the hygienic training of the patient. This is what is done by a short stay (of a few months) in a Sanatorium. The patient is trained in the hygiene of the treatment of the disease, which is not only invaluable to him in his struggle for the successful resistance of the disease, but is valuable in safeguarding others among whom he will afterwards mix. This is one of the main reasons for advocating Sanatorium treatment—even for short periods—to cases in an early stage. Evidence clearly points to the conclusion that in most cases short exposure to infection does not suffice to infect healthy persons to an extent that will produce serious disease.

The measures against Tuberculosis must include instructing the community in general as well as those exposed to infection from sufferers, and the instruction of sufferers themselves.

Public opinion must be brought to bear against indiscriminate spitting and against overcrowding and other evils of housing occupation. Much is to be hoped from the teaching of hygiene in Schools.

The Card of Information and Instruction (see Appendix) is being sent by the Health Department to homes where a case of Consumption is known to exist. Advice is given on all important points as to transmission of the disease, channels of infection, and disposal of phlegm, etc. The ideal to be aimed at is that wherever the patient lives and works his powers of infectivity shall be inoperative. This ideal is not likely to be realized unless specific instructions are given in such a way that they will become effective in the patient's life. Of the means to this end temporary abode in a Sanatorium is probably the most effective (Dr. A. Newsholme). The habits of life thus initiated can be maintained by continued watchfulness and care under a doctor, and by the home visiting of a competent and sympathetic Health Visitor or Nurse.

Under present conditions a large proportion of the total cases of Consumption remain unrecognised until "breaking down" in the lungs has occurred, and the patient is most infectious, and the chance of cure not great. It is very important that precautionary and curative measures should be begun at a very early period of the disease, as the earlier the treatment the more effective. Such possible indications of early Consumption, as "persistent colds and repeated attacks of "bronchitis," should be met by effective preventive measures.

Much difficulty is often found by the poor in obtaining Hospital outpatient letters, and then the nearest Hospital is over 10 miles distant. There is thus delay in receiving skilled attendance. Some provision is needed for the sick poor in our district,

The death rate for Consumption is greatest in early adult life (the average age at death in our districts varies from 21 to 26 years), and it is estimated that the average duration of life of a sufferer from the date of infection is about 5 years. It is probable therefore that Consumption exists, to a larger extent than has been usually recognised, among the Children in our Schools. My own experience so far in the inspection of Children of our Schools confirms this.

The recognition and exclusion from the Schools of such affected Children are most necessary, as with the air space and ventilation provided in some of our Schools it is most dangerous (particularly when Children are recovering from colds and ailments affecting the chest, as Whooping Cough and Measles) for healthy Children to sit and work near sufferers. This is one of the numerous benefits to be derived from the Medical Inspection of School Children.

The measures against Tuberculosis that Health Authorities should adopt are:—

- 1. The giving of advice and instructions to sufferers and those exposed and the general public.
- 2. The disinfecting and cleaning of infected premises and articles.
- 3. The provision of spit bottles to the poor.
- 4. The provision of dispensary treatment of poor patients.
- 5. The provision of Sanatoria or Hospital accommodation for these patients.
- 6. The provision of a Health Visitor, to include in her work the visiting of Consumptive patients.

The first three of these measures are being carried out by our Authorities.

#### SANATORIUM TREATMENT.

Home treatment if depended upon alone often fails to prevent infection, besides failing to cure the patient. Hence the importance of Sanatorium treatment.

The following and much of the above is taken from the Tuberculosis Memorandum of the Medical Officer of the Local Government Board:—Under Section 131 Public Health Act, 1875, the Sanitary Authority has power to previde such treatment for patients, whether patients are in receipt of relief or not. Before embarking on any large scheme each Sanitary Authority should consider what it can do with arrangements already available. Some Sanitary Authorities have found that in the intervals of epidemics empty rooms or wards of their Isolation Hospitals can be utilised for the treatment of Consumption, and have taken action accordingly. In rural districts it will be practicable by the use of temporary huts or tents erected either at the patient's home or in the grounds of the Infirmary or of the Isolation Hospital, to treat Consumptive patients with minimum expense.

With regard to the use under regulated conditions of the wards of an Isolation Hospital for the treatment of Consumption, experience has demonstrated that this can be done with entire safety to the Consumptive patient and with great success in his treatment.

The Sanatorium treatment may be directed towards the cure of the patient or towards such amelioration of the patient and incidental training in desirable habits as may be practicable in a shorter stay than is required for his cure.

Many patients either recover or without complete recovery continue to be able to work indefinitely, even when protracted Sanatorium treatment cannot be secured. Their working life can be extended and their capacity to spread infection can be stopped by an occasional stay in a Sanatorium of limited duration, say, for a month. It is on Sanatorium treatment of this type for patients still able to work that stress may be laid. patient usually does not lose his place by the short absence from work contemplated; he is willing to come into a Sanatorium for such a short stay, when he would not accept more protracted treatment; and the improvement experienced during such a short stay in a Sanatorium is often most remark-This, however, is not the only gain. When the patient enters the Sanatorium his dwelling is disinfected, his relatives are relieved temporarily from a source of anxiety, and the patient while in a Sanatorium is trained in the methods of disposal of sputum and in the general hygienic regulation of his life in a practical manner that is scarcely possible at home. On his return home he is therefore no longer likely to be a source of infection, and the general hygiene of his home is almost certain to reflect the good influence of his stay in the Sanatorium. From the standpoint of the Sanitary Authority a much larger number of patients can in this way be treated and prevented from becoming a source of infection, than if permanent cure of the individual patient were made the only consideration.

Although owing to the long duration and occasional long latency of this disease, results in regard to it cannot be measured with accuracy except after the lapse of a considerable number of years, it may confidently be expected that administrative measures will enable Sanitary Authorities gradually to bring Tuberculosis under their control, and to secure that it shall become as much a disease of the past in this country as leprosy has become. (Arthur Newsholme, Principal Medical Officer, Local Government Beard.)

#### PROPOSAL FOR OUR DISTRICTS.

At the end of this Report is appended my Special Report on a scheme for the use of the Sittingbourne and Milton Joint Hospital Board's Small-Pox Hospital as an open-air Sanatorium for the treatment of and hygienic education of cases of Consumption for the district, which was presented to the Joint Hospital Board and each of the constituent Authorities in July and August last. In that report proposed rules and regulations of admission are given and an estimate of cost. It was proposed to utilize the existing buildings on the Small-Pox Hospital site.

A Committee was appointed to consider the scheme. That Committee found:

- (1) That Consumption was not more prevalent in our practically rural districts than in the whole of England and Wales, which included the slums of our great cities.
- (2) That Consumption has not increased during the last 6 years.
- (3) They doubt that patients returning to their homes would utilise the information they had gained at the Hospital as to the method of life to adopt to cure themselves.

It has not been contended that the large number of persons dying in our districts is greater than in the past, or greater than in the whole of England and Wales, which includes the highly unhealthy slums of our cities; but we emphasize the fact that while most other diseases are declining year by year, this disease does not show sufficient decline; in fact, more persons are dying in Sittingbourne and Milton Regis of this disease than from any other cause. Surely this is sufficient to demand our consideration.

As regards the last finding of the Committee, experience in other places disproves their doubt; in fact, patients realizing the benefit of the training at the Sanatorium are most anxious to follow on in the same lines after returning to their homes. I know that is so from personal experience in this work.

More Recent Suggestion.—Since the above report was considered, a further suggestion has been made that a large ward of the temporary buildings at the Small-Pox Hospital might at small expense be moved to land belonging to the Hospital Board, and adjacent to the Keycol Hill Hospital grounds. This would greatly facilitate the administrative control (in the cooking, nursing, and general supervision).

A desire has been expressed by the individual Authorities for a combined meeting for further consideration of this matter, which again arose under the Tuberculosis Regulations, 1908.

#### TUBERCULOSIS REGULATIONS, 1908.

These regulations deal with Pulmonary Tuberculosis, or Consumption, among our pauper population. Notification of such cases to the Medical Officer of Health is compulsory upon certain officers. Power is given to the Guardians and the Sanitary Authorities to help these cases in many ways (by disinfection, supplying of appliances, by printed matter, etc.). The object is to prevent the spread of this disease among this class among whom this disease is particularly frequent, as Consumption not only more easily attacks the poor and ill-nourished, but so often causes poverty and pauperism by affecting the bread-winner of a family.

The action taken by each of the Authorities of the district was to authorise that

- 1. Booklets of information and instruction be sent to all cases of this disease so notified.
- 2. Pocket spittoons be given to such cases as require them.
- 3. Japanese paper handkerchiefs be supplied, when the public health would benefit thereby.
- 4. To request the combined Authorities to meet to discuss the provision of accommodation for the treatment of sufferers.

#### INFANTILE DIARRHŒA.

Summer Diarrhæa, as this disease is often called, because of its most frequent occurrence at that season, is in the opinion of many investigators a specific infectious disease as Typhoid Fever, although caused by an organism as yet unknown. The infection is probably usually conveyed through the Infant's food. When the ease is remembered with which milk, the chief food of a great number of Infants, is made a poisonous "culture" of bacteria with their toxins, the large number of Infants dying under 1 year of age is not surprising. Cow's milk is one of the best media or foods for the growth of most kinds of bacteria, and even when drawn from the Cow under (comparatively speaking) good sanitary conditions and conveyed to the public in the cleanest of vessels, the number of organisms present in a teaspoonful is generally many thousands, and in the summer very often reaches even millions.

The diminution during 1907 and 1908 of deaths from this disease is satisfactory.

#### INFANT FEEDING.

The results of investigations carried on during the years 1903 to 1906 in Brighton by Dr. Newsholme are sufficiently important to quote here.

Dealing with greater numbers than we can do the statistics are more valuable. In Brighton it has been ascertained by house-to-house visiting how the Babies of the working classes are fed. The feeding of each Infant who died under 1 year of age during this period was also ascertained. I will quote in short the results shown by these data.

- 1. Breast-Fed Babies under 1 year of age have only 1-12th, and breast-fed babies under 6 months have only 1-16th, part of the share of deaths from Diarrhæa which would fall to their share were the deaths from Diarrhæa evenly distributed among all the babies.
- 2. Babies Fed on Cow's Milk at all ages under 1 year had  $4\frac{1}{2}$  times, and at ages under 6 months had 6 times, as many deaths from Diarrhæa as they ought to have had on the same supposition.
- 3. Babies Fed on Condensed Milk at all ages under 1 year had 13 times, and at all ages under 6 months had 8 times, as many deaths from Diarrhæa as they ought to have had on the same supposition.

Therefore, from the above facts, it is twice as dangerous to feed babies on Condensed Milk as on fresh Cow's Milk—that it is 54 times as dangerous to feed babies on Cow's Milk as on Mother's Milk—that it is 156 times as dangerous to feed babies on Condensed Milk as on Mother's Milk.

Therefore we must do all we can to encourage Breast-Feeding for Babies and to discourage Weaning during the hot Summer Months, when this epidemic Diarrhœa is most prevalent. Also we must do all we can to obtain a pure Cow's Milk supply in our district.

#### SALE OF FOODS AND DRUGS ACT.

During 1908 in your district 55 samples of Foods and Drugs were taken by the Police and sent for analysis. One sample was found to be adulterated and another sample slightly adulterated, but not to an extent sufficient for Certificates of Adulteration to be issued.

## MIDWIVES ACT, 1902.

There are nine Certified Midwives practising in this District. Only one is a properly trained Midwife, the others holding their Certificates by virtue of being in practise in July, 1901. No irregularities occurred in the practice of any of them. On occasions it is necessary to warn uncertified women, said to be acting as Midwives, of the penalty to which they are liable.

#### SCHOOL HYGIENE.

Your Medical Officer of Health has at the beginning of 1909 been appointed the Medical Inspector of School Children for your district. This will ensure uniformity of procedure as regards quarantine, etc., better attention to the physically unfit Children, to the excluded sick Children, and eventually a healthier condition of the Schools, which should mean increased grant to the School Authorities by the prevention of Epidemic Disease.

The notifications from School Teachers to the Medical Officer of Health of cases of communicable diseases at the Schools were as follows:—(Table XI.)

# TABLE XI.

# NOTIFICATIONS OF CASES OF COMMUNICABLE DISEASES AT THE SCHOOLS, 1908.

School.		Whooping Cough	Scarlet Fever	German Measles	Chicken Pox	Ringworm	Mumps	Other Ailments as Colds & Sore Throats	Total in 1908	Total in 1907	Total in 1906
Bapchild & Ton	g		4		8			1	13	0	35
Bobbing .			1	1					2	3	5
Borden									0	12	2
Bredgar			1	1		1		$  \overline{2}  $	5	2	28
Halstow .	• •		100 11 70 2000	12					12	0	9
Hartlip .			1		9				10	5	1
Iwade		40							40	0	0
Murston .									0	1	48
Milsted		11	3			$\overline{1}$	5		20	0	1
Newington .	• •		1		24				25	18	23
Rainham .			1					1	2	118	63
Rodmersham .	• •	23			7		22	4	56	1	17
Upchurch .	•••			20		1		1	22	35	30
Tunstall .	•	12						2	14	0	0
Total in the District	}	86	12	34	48	3	27	11	221	195	26 <b>2</b>

These notifications necessitate numerous visits to the houses, interviews with parents at my office, and much clerical work.

# LADY HEALTH VISITOR AND SCHOOL NURSE.

The districts need the services of a Lady Health Visitor who is a qualified Nurse, working under the Sanitary and also under the Education Authorities. Her great sphere of utility would be:—

- (1) To lessen our Infant mortality by visiting and advising Mothers previous to and after the birth of their Children; giving advice and instruction upon the hygiene of the home, and the feeding and management of the Infants, etc.
  - (2) To supervise and instruct Midwives.
- (3) Visiting homes where any infectious disease exists, such as Whooping Cough, Measles, Chicken Pox, Mumps, as well as the more serious Scarlet Fever, Diphtheria, and Typhoid Fever and Consumption. Cases of these various diseases are notified to me from the Schools; and advising Mothers as to the management of these complaints.
- (4) To visit the homes and advise the Mothers of their Children found by the doctor on medical inspection at the Schools to be defective in some way. Often nothing is done now when a Child is found to be suffering from some complaint, as the parents often cannot afford to pay for medical advice. An experienced, qualified Nurse would be invaluable in this direction.

The cost of such a Nurse could be borne conjointly by the Kent Education Committee and the combined Sanitary Authorities.

The usual salary given is about £80 per annum, half of which borne by the Education Authority would leave £40 per annum to be provided by the three Sanitary Authorities. This would work out (on rateable value basis) at about £26 for Milton Rural District, £8 for Sittingbourne, and £6 for Milton Regis; or if provided by the Urban Districts of Sittingbourne and Milton alone, £23 for Sittingbourne and £17 for Milton Regis.

The great value to the community of such an official Nurse is, I am sure, well worth the above cost. I hope when trade revives and the districts are in a better financial state, that the above suggestions will obtain your earnest consideration.

### SANITARY INSPECTION.

The following Table, prepared by Mr. W. Leonard Grant, Sanitary Inspector, gives the work as far as it can be given in tabular form. A great proportion, however, of the routine work consists of House-to-House inspections, which is quite apart from the incidental inspections following upon com-

plaints received. Special visits also have been made to places under the control of the Sanitary Authority, as Slaughter-Houses, Cowsheds, Dairies, Milkshops, Bakeries, Workshops, as well as to premises where infectious disease exists or has existed.

# ABSTRACT OF CASES OF INSANITATION. From January 1st to December 31st.

					}	1907	1908
Foul Cesspools	• • •					39	
Foul Privies			• • •	• • •		204	641
				• •		79	47
$\sim$	• • •		• •			56	<b>4</b>
Defective Roof, Gut	L L	<i>)</i> /		• • •	• •	22	-
Dilapidated W.C.'s	or Pr	ivies					16
				* * *			26
Insufficient or Defe						5	2
Overcrowding .						5	
Insufficient W.C. A	ccomi	nodatio	on				
Insanitary Houses	and P	rivies				5	11
Manure	• • •		• • •	• • •		44	4
Animals kept as to	be a I	Nuisan	ce			11	3
						470	770
	4 7	OT TTATE	TATE A				

#### APPENDIX A.

Extracts from Special Report of Dr. T. Barrett Heggs, M.O.H., and Mr. W. L. Grant, Inspector of Nuisances, on the need of a System of Drainage and Excrement Disposal for the Parish of Rainham, situated in the above Rural District.

DECEMBER, 1906.

# GENTLEMEN,

The Parish of Rainham is situated at the most westerly portion of the Milton Rural District, and is bounded on the North-East, East, and South-East by the Parishes of Upchurch, Newington, and Hartlip, of the same Rural District; on the West by the Gillingham Urban District; on the South by the Parishes of Stockbury and Bredhurst of the Hollingbourne Union; and on the North by the Otterham and Bartlett Creeks of the Medway.

The High Street, Broad Walk, and Moor Street, Rainham,

are parts of the high road from London to Dover.

The Industries are chiefly brick and cement making and

agriculture, the chief crops being Fruit and Hops.

Geologically, the subsoil is chalk, overlaid generally by brick earth with a covering of light loam. Towards the Creeks are extensive alluvial deposits.

From the flat ground bordering the Creeks on the north the land rises gradually towards the southern part of the district. The populous part of the Parish is thus elevated with a gradual fall towards the Creeks. The area is 3,608 acres. The houses are chiefly clustered around the two main roads, the High Street and Station Road, some 70 houses known as Lower Rainham are situated on the low lying land near the Creek, and adjoin the Gillingham district.

The number of inhabited houses, the population, and its steady increase are as follows:—
In 1881 the number of houses was 541, and population 2,719.
In 1891

,,
640,
,,
3,082.
In 1901

,,
801,
,,
3,688.

In the decade 1891 to 1901 the average number of occupants per house was 4.6, and since 1901 there have been 80 houses built. Assuming the average number of occupants in each house to be the same (and as the class of house has not changed we may fairly do this) then the present statistics are as follows:—In 1906 the number of houses is 881, and population 4,060. The population estimated to the middle of 1906, by the Registrar-General's method, reaches the same figure, 4,060.

The Rateable Value is £18,087. The Assessable Value (to the Poor Rate) is £16,558. A penny rate produces about £65.

# EXCREMENT DISPOSAL AND HOUSE DRAINAGE.

The prevailing systems of excrement disposal are uncemented or soak-away cesspools and privies. From the majority of these nuisances are periodically recurring, and they are often found overfull, as although being soak-away, emptying is required less frequently, the landlords often seem opposed to carrying out the necessary emptying. In several instances which have come to my notice cesspools remain permanently filled within a few feet from the houses, as the necessity of emptying is overcome by connecting through an overflow to a second pit a few feet away. The house drains often are connected to the same cesspool as the w.c., and it was not unusual during the summer months to receive complaints of the noxious gases from these conjoint cesspools bubbling through the yard gullies, the ventilating pipes being absent or too small. The privies consist of rudely constructed brick vaults, and are found in some of the more populous parts. They are frequently foul and overfull, the wooden framework often dilapidated, and the pits covered by boards. Needless to say these privies are a continual source of nuisance and complaint,

These rude cesspits are in some cases within a few feet of wells used as the domestic supply. In a few other cases old wells have been converted into cesspools with the same danger of infecting other wells still in use. Only very few of the water closets have flushing cisterns, and being hand flushed pans are occasionally found foul. When cesspools are ventilated the pipes are often of too small a bore.

The house drains usually receive slop water, rain and surface water from a gully or gullies in the yard. They are generally disconnected from the sink waste pipe, but the latter very often opens directly over the gully, no channel being provided. As the yard gullies receive rain water, frequently after a heavy rain cesspools overflow, and yards are flooded even to the house walls.

The following table gives the actual number of the above conveniences. It will be seen that nearly 40 per cent. of the houses are supplied by privies, and nearly  $\frac{1}{4}$  of the w.c. cesspools are unventilated.

	Ventilated Cesspools from W.C. with Trapped Pans.	Cesspools from W.C.	Privies and House Drains leading to Unventilated Cesspools.	House Drains	Privies and no Sink Drains.
Actual Number.	421	133	288	30	9
Percent-age.	47.8 per cent.	15 per cent.	32.6 per cent.	3.4 per cent.	1.02 per cent.

### WATER SUPPLY.

The Parish is supplied with water by the Rainham Water Company, a private Company with a boring about 900 feet deep into the green sand. The supply is ample to meet the needs of a complete water carriage system of excrement disposal in the Parish.

# INFANTILE MORTALITY IN RAINHAM.

The Infantile mortality or the annual number of deaths of Infants under one year of age to every thousand births during the same year is often accepted as a reliable test of the sanitary condition of a district. This mortality during the last five years has been as follows:—

				In Engl	and	In County
$\operatorname{In}$	In	Rainha	m.			of Kent.
$1905\ldots$		119.6	agair	nst 126		102
$1904\ldots$						130
$1903\ldots$		71.4	,,			110
1902		198.1	,,			116
1901		81.3	,,	1 2 2		131

So that in the years 1902 and 1904 the mortality far exceeded the average mortality throughout England and Wales and in Kent alone.

# THE PREVIOUS INFECTIOUS DISEASE HISTORY OF RAINHAM PARISH.

During 1906, up to December 1st, apart from the Rainham epidemic of Scarlet Fever, there have been only four cases of Scarlet Fever in the whole Rural District. The 24 cases at Upchurch, 8 cases at Newington, and 4 cases at Lower Halstow were directly attributable to the Rainham epidemic. Of the other infectious diseases the following are the numbers in Rainham and in the whole of the Rural District:—

	In		$\operatorname{In}$
Rura	l Distr	ict.	Rainham.
Diphtheria			. 2
Erysipelas	. 10		. 8
Typhoid Fever	. 10	,	. 3
Puerperal Fever.	. 1		. 1
			edited/finest
	27		14

So that up to December 1st, apart from the epidemic of Scarlet Fever, half of the number of notified cases of infectious diseases were from Rainham.

Again, in 1902, of the total 32 cases of Small-Pox which occurred in the whole Rural District, 25 were from Rainham.

In 1901, of the total 86 notifications of infectious disease in the whole Rural District, 31 were from Rainham, 11 of the total 18 cases of Scarlet Fever coming from Rainham.

In 1900. During this year 25 cases of Diphtheria were removed to the Infectious Diseases Hospital from Rainham.

In 1899. During this year Rainham suffered from an epidemic of Scarlet Fever, which later spread to Newington and the neighbouring Parishes; 45 cases occurred in Rainham alone.

So we see that although in the years 1903, 1904, and 1905 there was no epidemic of notifiable infectious disease in the Parish of Rainham, yet the previous history was such as to suggest that all was not well with the sanitary arrangements of the Parish. The magnitude of this present epidemic is to some extent undoubtedly due to the fact that a few years had elapsed since an epidemic of this disease had previously visited Rainham.

# SANITARY DEFECTS FOUND IN HOUSES INFECTED WITH SCARLET FEVER.

In ten of the affected houses the cesspools were found overfull, and in houses where privies existed the latter were invariably foul.

I myself visited the infected houses, and was struck by the frequency of chronic throat ailments in the Children of these families; subject to sore throat or chronically enlarged tonsils were common histories. Numerous complaints were received of the bad smells and other nuisances from the drains, cesspools, etc.

I consider that these insanitary defects rendered the Children of this Parish easy victims for the spread of the disease, and to prevent a recurrence of this the following recommendations should be carried out:—

### RECOMMENDATIONS.

- (1) That a scheme of drainage by public sewers, combined with a system of sewage disposal, be adopted for the Parish of Rainham.
  - (2) The conversion of all privies into water closets.
  - (3) The abolition of existing cesspools wherever possible.
- (4) That steps be taken to secure that an adequate supply of water for flushing be furnished to all water closets in the Parish by obtaining Urban powers for Rainham to adopt Sec. 23 of the Public Health Amendment Act, 1890, in respect thereto.

# ON RAINHAM DRAINAGE BY THE SANITARY INSPECTOR.

For some years past an ample supply of water has been provided by the Rainham Water Company. This water is of excellent soft quality, and is obtained from the green sand at a depth of 910 feet below the surface, the well being situated at an elevation of 220.00 and well away from any probable chance of contamination. The number of houses supplied from these works is 775, and the remainder (106 in number) obtain their supply from shallow wells, many of which are situated in close proximity to soakaway cesspools, which latter, if steined at all, are as a rule lined only with dry brickwork.

The sewage in the district is entirely of a domestic character, mixed with rainfall from roofs, yards, etc. No factories making sewage exist in the district.

The surface level range from 6.00 in the marshes to 230.00 near the South-West corner of the Parish, the general fall being towards the river and creek margins, so that a scheme of drainage could be arranged on a gravitation system, providing sewers of good self-cleansing gradients for the populous part of the district, with disposal works adjacent to the Creeks into which the effluent might be safely discharged.

6th November, 1906.

#### APPENDIX B.

Scheme for the use of the Sittingbourne and Milton Joint Hospital Board's Small-pox Hospital as an Open-air Sanatorium for the treatment and Hygienic Education of cases of Consumption from the District,

BY THE MEDICAL OFFICER,

July, 1908.

# TO THE SITTINGBOURNE AND MILTON JOINT HOSPITAL BOARD.

Mr. Chairman and Gentlemen,

I append for your consideration a report upon the necessity for providing accommodation for the treatment and hygienic education of cases of Consumption from your district, with a scheme for the use of the Board's Small-pox Hospital, as an open-air Sanatorium for this purpose.

This highly infectious disease—Consumption—is the cause of more deaths in our districts than any other disease. In 1907 there were 36 deaths from Tuberculosis, or 11 per cent. of the total number of deaths in the combined districts. Excluding the very young and very old, however, we find that during 1907 Tuberculosis was the cause of 20 per cent. of the deaths of persons dying between the ages of 15 and 65 years. This number of deaths is not markedly diminishing, as is seen by the following figures of the last six years:

Deaths from Tuberculosis in the combined districts:

The infectious diseases, Typhoid Fever, Scarlet Fever, and Diphtheria, together, were the cause during the last six years of the deaths of 52 persons from our three districts. During the same period Tuberculcsis had caused 221 deaths in our districts. So that four times as many deaths occur among us from Tuberculosis than from these three infectious diseases put together.

The 221 deaths from Tuberculosis during the last six years were distributed as follows:—

Milton Rural District. Sittingbourne. Milton Regis.
91 76 54

These figures are practically in proportion to the populations of the three districts, so that the three districts are about equally affected.

Consumption is caused by a micro-organism, a bacillus, which is present in the effected organs of sufferers from this disease. It is communicated to healthy people from persons suffering and from homes infected by sufferers. As you are aware, since October, 1906, this disease has been voluntarily notifiable by medical men in our districts, and during this period 30 cases of this disease have been so notified. Little can be done for these sufferers, however, without such accommodation as I am now asking you to provide. This accommodation will enable these cases to get a good start towards their recovery, to learn what open-air treatment is, and how to adapt it to their homes. Sufferers will learn, not only how to combat the disease, but how to do so without any risk or danger of communicating the disease to others.

In the site and buildings of the Small-Pox Hospital of the Board you have a splendid site and suitable accommodation for the treatment of this disease. No alteration of the buildings will be necessary. At small expense in fitting up they can be well adapted for this work. The administration and management can be undertaken from the Hospital at Keycol Hill.

If the number of beds provided is definitely fixed, as I should advise, the cost will also be fixed and limited to the initial expense anticipated. There is no reason, therefore, why the initial expense should increase unless and until the Board should themselves decide to do so.

There has been no case of Small-pox in the districts since 1905, and the buildings, are, of course quite free from any infection of any kind, having been from time to time thoroughly disinfected.

I have reason to believe that as Consumptive cases can be sent home promptly in the event of a case of Small-pox being notified, the Local Government Board will have no objection to the use of our Small-pox Hospital for this purpose.

I am, your obedient servant,

T. BARRETT HEGGS.

Town Hall, Sittingbourne.

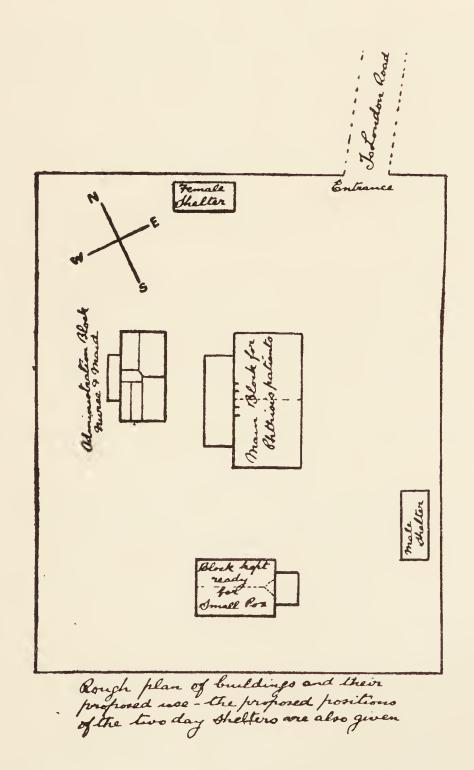
### SITTINGBOURNE AND MILTON OPEN-AIR SANATORIUM.

#### PROPOSED RULES AND REGULATIONS OF ADMISSION.

- (1) The accommodation of the Sanatorium is strictly limited to 10 beds (5 male and 5 female). The Medical Superintendent is not authorized to make any further provision.
- (2) Cases are eligible for admission under the following conditions: that he or she
  - (a) is a notified case of Consumption (Pulmonary Tuberculosis;
  - (b) Is now and has been for the previous two years a resident of Milton Rural, Sittingbourne Urban, or Milton Regis Urban districts;
  - (c) is considered by the Medical Officer to be a suitable case for such treatment;
  - (d) is willing to conform to the Rules of the Sanatorium.
- (3) Cases are not eligible for re-admission for a period of two years from the date of previous discharge from the Sanatorium, without special sanction of the Board.
- (4) Cases are admitted subject to the above Conditions, in the order in which application is made for admission, providing that as far as possible 4 beds will be utilised by the rural district and 3 beds by each of the urban districts.
- (5) The duration of treatment at the Sanatorium to be one month. This period can be extended by the Board in suitable cases in the following ways: (a) by payment of an inclusive fixed charge per week (10,0) towards the cost of maintenance, charges to be prepaid; and (b) in necessitous cases by special dispensation of the Board.
- (6) Visiting days are Thursdays and Sundays, 3 to 4 p.m. Two visitors allowed to each patient.
- (7) Patients not conforming with the Rules of the Sanatorium can be at once discharged.

#### BUILDINGS TO BE USED.

Of the two Ward Blocks at the Small-Pox Hospital, it is preposed to use only one, the larger. The other Ward Block will be kept empty. Instant accommodation would therefore be at hand, after the Consumptive cases were sent home, in the event of a case of Small-Pox being notified.—See rough plan.



#### ESTIMATE OF COST OF PROPOSED SCHEME.

A.—Establishment Charges. Original Fourtlay in fitting up the Wards, etc. { Example 1.5   Compared to the content of the conte	Furniture and slight alterations
Salaries for Management and Staff, M.	Surse       £         Iaid       15         Iatron       20         Iedical Officer       40         Porter       10
B.—Cost of Maintenance and cure of Patients, £350 per annum.	Cost of Feeding 10/0 per head per week is £300 approx. per annum (including two staff). Cost of Heating (coke stoves) and Lighting £50 per annum.

Total cost per annum would be approximate £460. This cost is fixed and cannot increase so long as the number of beds is definitely fixed and limited to ten. There should be no difficulty in thus keeping the expense down to the Board's estimate.

A penny rate in the combined districts produces about £500 per annum. The estimated cost, therefore, of providing 10 beds for Consumption, under the above conditions, would not exceed a penny rate to the districts.

After the initial equipping of the Hospital is carried out there will be very little establishment charges, and the maintenance charges for the patients will be charged to those districts from whence the Consumptive patients come, so that there is no fear of one district paying for the treatment of the Consumptives of another district.

# COMPARISON OF THE ESTIMATE WITH THE ACTUAL COST OF SIMILAR PROVISION ELSEWHERE.

From an Annual Report, June, 1908 (Stanhope Sanatorium):

Number of beds, 45. Average number of patients per day, 41.

Admitted during the year, 154. Duration of treatment, four weeks and upwards.

The total ordinary expenditure for the year 1907-8 was £2,112/19/6, that is the total cost of each patient per week was 18/6.

At the same rate as the above Sanatorium (18/6 per head per week), the cost of keeping ten beds continually filled would be £481 per annum. This practically coincides with our estimate (£450) obtained in detail.

#### THE UTILITY OF THESE INSTITUTIONS.

The results of the treatment of the cases at the above Sanatorium were as follows:—Of 140 patients discharged during the year 1907-8:

51 had the disease slight (Class A).—Of these 23 or 45 per cent. left cured, average stay 15.6 weeks.

- 31 had more extensive disease (Class B).—Of these no cures, but 22 much improved and 17 went back to work.
- 58 had very advanced disease (Class C).—Of these none cured, but 28 very much improved and 24 returned to work.

The Medical Officer says: "The results of the treatment of the more advanced cases need cause no disappointment, considering the shortness of their stay in the Sanatorium, for even to them and their friends THE EDUCATIONAL VALUE OF A STAY IN A SANATORIUM IS GREAT."

#### OTHER SUGGESTIONS.

A suggestion has been made that we should wait until at some future time, probably several years hence, there is built a County Sanatorium, to which the Local Authorities could send cases by paying for them, or at which Local Authorities could subsidize beds for the poor Consumptives of their district.

In the county of Durham, where there is a Sanatorium for the county, at which this can be done, the cost to any local Authority to subsidize a bed is £75 per annum per bed, or 30/0 per week per patient. Ten beds at this rate would cost £750, as compared with £460 under the proposed scheme.

No cheaper method than that of utilizing the existing buildings and existing administration in the district can be or will ever be found.

Secondly.—Any county scheme would take years to mature, and meanwhile our Consumptives are dying and the disease spreading.

Thirdly.—By doing nothing now the numbers to be treated at the Authorities' expense later on will be much greater than if a small scheme is started now.

DETAILS OF ACTUAL COST AT OTHER INSTITUTIONS COMPARED WITH OUR ESTIMATE.

				155 - 16 - 16 - 16 - 16		N. N. N. N. N.	and a second of the second of
Stanhope Sanatorium 40 (45 Beds).	Cost of 10 Patients at same rate as Stanhope.			Estimate of 10 Patients at proposed Sanatorium.			
	£	S.	d.	£	s.	d.	£
For Provisions	1005	5	11	251	6	8	300
For Salaries and Wages	601	13	6	150	8	4	110
For Rent, Rates, Coal, and							
Gas	161	2	4	40	5	7	50
Medical Requisites		0	1	1	15	0	1
Repairs and Renewals,	•		-				G1: 1 4
Printing, Lectures, and							Slight
General Expenses	170	11	0	42	12	9	
General Expenses							/
Total ordinary expenditure							
1906-1907	1995	12	10	498	18	0	460
1000-1001	, , , , ,				-		

# DETAILS OF REQUIREMENTS.

FURNITURE, &c. (estimated cost £25).

- 1.—For the Two Wards (male and female):—10 folding chairs, 8 bedside rugs, 2 tables, 4 screens, 5 fixed windows to be hinged to open.
  - 2.—For the Day Shelters:—10 folding chairs, 10 rug blankets.
- 3.—For the Administrative Block:—2 chests of drawers, 1 bedstead, 1 washhandstand, 2 folding chairs, 2 small chairs, 5 rugs, 1 table, 2 doors required in passage.

LINEN (estimated £50).—20 counterpanes, 40 blankets (top), 15 blankets (under), 50 sheets, 10 macintosh sheets, 24 draw sheets, 50 pillow cases, 24 hand towels, 12 bath towels, 6 round towels, 6 doctor's towels, 6 table cloths, 24 dinner cloths, 24 locker cloths, 12 tea cloths, 12 glass cloths, 12 lavatory cloths, 12 dusters, 4 screen covers, 12 cushion covers, 6 table covers.

CROCKERY (estimated at £5).

### APPENDIX C.

# REPORT UPON THE WATER SUPPLY OF IWADE PARISH.

### TO THE MILTON RURAL DISTRICT COUNCIL.

**D**ECEMBER, 1908.

Mr. Chairman & Gentlemen,

In accordance with your instructions I submit my Report on the Water Supply of Iwade. The existing supply consists entirely of wells, mostly shallow or surface wells. There are numerous complaints of the water—its abnormal hardness, that most supplies become cloudy at times, in some "much deposit," in others "bad taste," and in one "a large amount of iron." The well water is often not used for washing, rain water being relied upon. Several houses have no water supply, but are dependent upon the privilege (which can be taken away at any time) of using the wells belonging to other owners in the vicinity.

The chief wells with the families dependent upon them for their water are as follows:—

(1) Owner, Gascoyne, The Street Iwade. This well supplies the following families:—Willis, Sinclair, Hadlow, Marshall, Avery, Barnes, and Onion.

This water was sent to Mr. Harvey (Public Analyst, of Canterbury), whose results entirely confirmed my own analysis. The figures are excessive in several respects, indicating organic impurity. An extraordinary amount of hardness is present in the water—48 degrees; 25 degrees permanent (that is remain after boiling). Mr. Harvey says the water is unfit for drinking or for domestic use, and I entirely corroborate his opinion.

(2) Bensted's well, School Lane. Families using the water are Jarrett, Taylor, Russell, Baker, Caplin, Brunger, and Holland.

Here the results of analysis are excessive in several respects, and 46 degrees of hardness are present, 15 of which are permanent.

The water is not fit for domestic use.

(5) Woolpack Inn well, supplying families Colchin, Mantle, Jarrett, Russell, and Void.

Shows evidence of slight organic impurity, and has 46 degrees of hardness, 20 of which are not removed by boiling.

The water is unsuited for domestic use.

(4) The Vicarage well, supplying the Vicarage, and also families Austin and Hopping, by privilege.

This water shows excessive hardness—34 degrees, of which 15 are permanent.

The water is, therefore, unsuited for domestic use.

(5) Kingsnorth's well, supplies families Holdstock, Rose, and two families Kingsnorth.

The hardness of this water is excessive—44 degrees, of which 23 are permanent.

The water is, therefore, unsuited for domestic use.

(6) Samson's well, supplies families Onion, Lockyer, and Samson.

The hardness here is excessive—38 degrees, 15 of which are permanent.

The water is, therefore, unsuited for domestic use.

There is always a sufficiency of water in the wells—there is no shortage of supply. The water from all these wells, however, is impregnated with salts to an extraordinary degree, and is, therefore, extremely hard (34 to 48 degrees; Sitting-bourne water has 17 degrees). The water from all these wells is, therefore, unsuitable for washing and other domestic purposes, a fact which the villagers appreciate now. In all these wells there is a large amount of chlorides, possibly from the presence of sea water, which also renders the water undesirable. I cannot say the existing supplies are injurious to health (except wells No. 1 and 2), and I am unable to trace any peculiar predisposition to any disease in the village. It is worthy of note that the Schools are dependent upon rain water for their supply.

On the whole, therefore, in my opinion it is desirable that a good public supply be obtained for the village from Works.

# APPENDIX D.

#### METEOROLOGICAL OBSERVATIONS, 1908.

Data collected at Newgardens, Teynham, by Lt.-Col. J. F. Honeyball, V.D. Kew certified instruments in Stephenson Screen.

5in. rain guage, 1ft. 3in. above ground, 20ft. above sea level.

		Minimum			
	Rainfall.		Temperature.		Temperature.
January	1.29		54.0 on $28$ th	• •	16.9 on 5th
February	0.98		54.1 ,, $15$ th		23.1 ,, 13th
March	2.05		60.8 ,, 24 th	• •	25.9 ,, $13$ th
April	1.98		58.1 ,, 2nd		28.0 ,, 20 th
May	1.36		78.0 ,, 11th		41.3 ,, 23rd
June	0.70		79.2 ,, $3rd$		40.0 ., 25th
July	2.53		82.1 ,, 27th?		44.0 ,, 3rd
August	3.45		81.5 ,, th?		43.0 ., 11th
September	1.55		77.7,, $20$ th	• •	36.6 ,, 13th
October	1.40	• •	76.9 ,, 1st		34.0 ,, 25th?
November	0.83		59.4 ,, 12th		19.0 ,, 10th
December	2.09		54.1 ,, 15th?	4 +	7.3 ,, 31st
Total	20.21				